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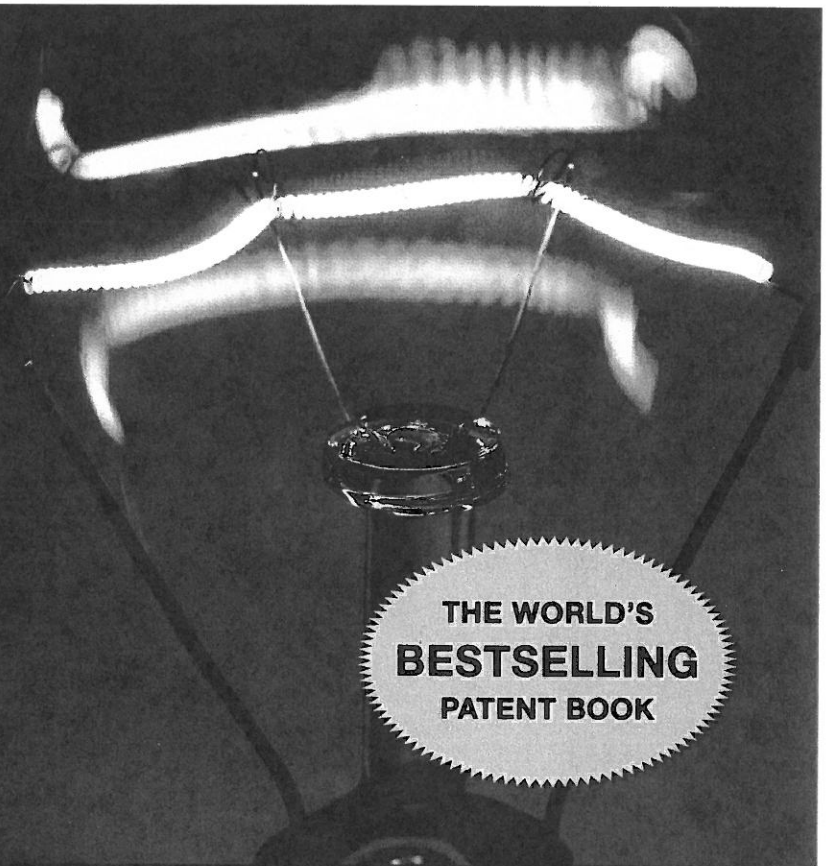

THE WORLD'S BESTSELLING PATENT BOOK

PATENT ATTORNEYS DAVID PRESSMAN
& THOMAS J. TUYTSCHAEVERS

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CLASS 482, EXERCISE DEVICES

SECTION I - CLASS DEFINITION

This class provides for apparatus intended to be operated by a human user for the purpose of: (a) facilitating the conditioning or developing of a muscle of the user by repetitive or continuous activity of the user or, (b) participating in a track, field, gymnastic, or athletic activity, unless by analogy of structure or by other function the apparatus is classified elsewhere.

(1) Note. In some of the definitions of subclasses hereunder, the phrase "significance is attributed" is used to describe a function that is the primary use of the structure of patents therein. The structure of the apparatus may be capable of use for other purposes, but the claimed disclosure of the patent so placed indicates the intended primary function of the structure as that described by the title and definition of the subclass.

(2) Note. Conditioning or developing a muscle includes helping a user, e.g., an infant or invalid, to walk or learn how to walk unless provided for elsewhere. See Subclass References to the Current Class, below.

23 **GYMNASTIC:**
This subclass is indented under the class definition. Subject matter wherein significance is attributed to the use of the apparatus for an acrobatic purpose by the user.

(1) Note. The terms "gymnastic" and "acrobatic" have come to denote and describe various pieces of equipment such as a trapeze, bar, vaulting horse, diving board, trampoline, etc., that are used in physical activities known by similar names. These activities are characterized by extreme movements of the user, who uses the equipment as a fulcrum or starting area to launch bodily through space, swing therefrom, or perform other such physical activity thereon. The significance of the apparatus is more in the activity for which the apparatus is used than in the structural differences between the apparatus (see the Class Definition, (1) Note).

SEE OR SEARCH THIS CLASS, SUBCLASS:
109, for a club type exercise device which may be used for juggling.

SEE OR SEARCH CLASS:
273, Amusement Devices: Games, particularly subclasses 441+ for a game apparatus dealing with physical ability.

24 **Trapeze or rings:**
This subclass is indented under subclass 23. Subject matter wherein the acrobatic apparatus is either (1) a short, horizontal, swingable bar suspended at each end by a flaccid strand, e.g., a rope, etc., or (2) a pair of annular objects each suspended by a flaccid strand, e.g., a rope, etc., about which the user may move in an acrobatic manner.

SEE OR SEARCH THIS CLASS, SUBCLASS:
143+, for a suspension device from which the user may freely hang.

SEE OR SEARCH CLASS:
472, Amusement Devices, particularly subclasses 118+ for an amusement swing.

25 **Vaulting or pommel horse:**
This subclass is indented under subclass 23. Subject matter wherein the acrobatic apparatus is (1) a supported body used for jumping over or for another acrobatic purpose, i.e., a vaulting horse or (2) a supported body with a pair of handles mounted thereon for an acrobatic purpose, i.e., a pommel horse.

SEE OR SEARCH THIS CLASS, SUBCLASS:
16+, for a track or field sport in which a user jumps, vaults, or hurdles over a crossbar.
34, for a bar or rope for balancing upon.
38+, for a horizontal bar used for a gymnasts purpose.

26 **Projector:**
This subclass is indented under subclass 23. Subject matter wherein the acrobatic apparatus

Fig. 6J—Sample Page of *Classification Definitions*

Search Classifications" section of the search worksheet with appropriate classes to search for prior art relevant to Millie Inventress's invention.

Steps 3 and 4: Check the Accuracy of the Relevant Classifications

Check the accuracy of the classifications you found in Step 2 by reviewing the Class Schedule and Class Definitions. Remove any classes and subs that you feel aren't relevant to your invention.

Step 5: Search the Patents and Note Any Relevant Prior Art (Patents and Other Publications) Under Your Classification

After obtaining a list of classes and subclasses , you search through the actual patents in these classes on the Internet (or at the patent office). On the Internet, go to http://patft.uspto.gov and click "Quick Search," enter the first class and sub in the "Term 1" box, and hit Search. Do this for each relevant class and sub under Issued Patents and Patent Applications. If you're in the public search room at the PTO, you'll have to remove bundles of patents from slot-like shelves in its huge stack area. Bring them to a table in the main search area, and search them by placing the patents in a bundle holder and flipping through them. In the examiners' search room, the patents are found in small drawers, called "shoes" by the examiners. You should remove the drawer of patents, hold it in your lap, and flip through the patents while you're seated in a chair; generally, no table will be available.

The computer will search according to your class and subclass and present you with a list of patents. As you flip through the patents on the monitor (it's far easier on EAST!), you may at first find it very difficult to understand the patents and to make your search. Don't be discouraged! You'll find it easier to understand newer patents (see Le Sueur—Fig. 6D(c)), because they have an abstract page up front that contains a brief summary of the patent and the most relevant figure or drawing.

You'll find that the older patents (see Gabel—Fig. 6D(a)) have several sheets of unlabeled drawings and a closely printed description, termed a "specification," after the drawings. However, even with older patents, you can get a brief summary of the patent by referring to the summary of the invention, which is usually found in the first or second column of the specification. Near the end of each patent, you'll find the claims. These are formally worded, legalistic sentence fragments that usually come after and are the object of the heading words "I [or "We"] claim." The claims define the legal scope of offensive rights held by the owner of the patent.

In recent years, the PTO added "Patent Document Kind Codes" to the numbers of patents and their other publications, in accordance with international practice. Fig. 6D(d) provides a list of these codes.

Common Misconception: If the claims of a prior patent don't cover your invention, you're free to claim it in your patent application.

Fact: The claims of a patent are there solely to define the monopoly or scope of offensive rights held by the owner of the patent. Patent owners use claims mainly in licensing or in court to determine whether the patent is infringed—that is, whether the hardware that an alleged infringer makes, uses, or sells violates the patent. Thus, when you encounter a relevant patent during a search, you should not fall into the "claims trap," that is, you should not read its claims. You should treat the patent like any other publication (book, magazine article, etc.) to see if the patent's description (the written part other than the claims) or drawings disclose (anticipate) your invention, or any part of it. (According to the patent statutes, the entire written part of a patent or patent application—that is, the description, claims abstract—is called the "specification." However, some practitioners refer to just the description as the "specification" and consider the claims a separate part.) Because the patent's claims merely repeat what's already in the description and drawings, they won't contain anything new, so you need not even read the patent's claims to understand the full technical disclosure of any patent. The description and drawings will almost always contain more than what is in the claims anyway. So even if a patent's claims don't cover your invention, its description and drawings may still disclose your invention. Since the patent is a prior publication as of its filing date, it can thus anticipate your invention, even if it doesn't claim your invention. (If you were free to

Anticipation Versus Infringement

Many inventors have asked me, "How can an expired patent block me from patenting my invention?" That is, how can an expired patent be a valid prior-art reference?

If a patent ceased to be prior art when it expired then anyone could repatent the wheel, the sewing machine, etc. The misconception that a patent ceases to be a prior-art reference when it expires represents a confusion of *anticipation* with *infringement*. They are entirely separate areas in patent law and should be considered independently.

Anticipation is a situation that occurs when a proposed or new invention is discovered or found anywhere in the "prior art" (prior public use or prior publications, including the specification of any in-force or expired U.S. or foreign patent, any prior book, periodical article, etc.). Since the existence of the prior art proves the invention isn't new, the putative invention is said to be anticipated by the prior art and thus can't be patented. (35 USC 102.)

Infringement is a situation that occurs only when the claims of an in-force patent "read on" a product or process. If so, then the product or process *infringes* (violates) the patent and the patent owner may be able to negotiate licensing royalties from the infringer, or successfully sue the infringer for money damages and/or an injunction ordering the infringer to cease infringing. (35 USC 271.) (Note that a patent application can't infringe anything.)

If an invention is anticipated by a prior-art reference, that does not necessarily mean that it would infringe the reference, since the reference may be (a) a periodical article or book, which can't be infringed, (b) a foreign patent, which can't be infringed by activity in the U.S., or (c) an expired U.S. patent, which can no longer be infringed. Even if an invention is anticipated by an in-force U.S. patent, the invention usually will not infringe the patent. Why? Because the patent's claims usually will not read on the invention, most likely because the patentee was not able to get broad enough claims allowed due to even earlier prior art. The PTO is never concerned with and never takes any action with regard to any infringement; their main concern is to find anticipations to prevent the issuance of patents on old inventions.

EXAMPLE: In the early part of the 20th century, J.A. Fleming invented a two-element vacuum tube—the diode—that rectified alternating current. Then Lee De Forest added a third element—a control grid—to the diode, making a triode, which was capable of amplifying signals. Even though triodes infringed the diode patent, the Patent Office granted De Forest a patent since the PTO is not concerned with infringements. Although De Forest was not able to manufacture his triode without infringing Fleming's diode patent, Fleming was not able to make triodes without infringing De Forest's patent. Cross-licensing —in which the parties exchanged rights to their respective patents—solved the problem, enabling each to practice the other's invention.

claim an invention that a prior patent disclosed but did not claim, that would make patents worth less as prior art than other publications, such as magazine articles!)

Another reason for not reading the claims of searched patents is that they're written in such stilted legalese that they're difficult to understand. Nevertheless, some searchers do like to read claims of patents to get a quick "handle" on the patent's technical content. Also, if you make an *Official Gazette* search in a Patent and Trademark Resource Center or regular library, you'll have to rely on claims for the most part, since most of the OGs contain only a single claim of each patent.

If you do read the claims, keep in mind three considerations:

1. If a prior-art patent shows (that is, describes) but doesn't formally claim your invention, this doesn't mean you're free to claim it.
2. A patent contains much more technical information than what's in its claims; all of

this technical information can be used as prior art, just as if the patent were an article in a technical magazine. Thus, you should use the claims only to get a "handle" on the patent; you should not regard them as a summary or synopsis of the patent's disclosure.

3. The scope of coverage you will likely be able to obtain for your invention (see Section J, below) will usually be narrower than the scope of the claims of the closely relevant prior-art patents you uncover.

Common Misconception: If your invention is covered by the claims of a prior patent, you will be liable as an infringer if you file a patent application on the invention.

Fact: Neither a patent application nor its claims can infringe a prior patent. Only the manufacture, use, sale, offer for sale, or importation of an invention in physical form can infringe. And, as previously stated, the PTO has absolutely no concern about patent infringements.

Don't think about obviousness as you search because this may overwhelm you and detract from the quality of your investigation. Rather, at this stage, try to fish with a large net by merely looking for the physical features of your invention.

As you search, keep a careful record of all patent classes and subclasses you've searched, as indicated in Fig. 6G, above. Probably 95% of the references you encounter when you search will not be relevant. If you find relevant patents or other art, write their numbers, dates, names, or other identification, and order or download copies later. Although you need only the number to order a patent, write the issue date, first inventor's name, and classification as well, to double-check later in case you write down a wrong number.

If you do find an important relevant reference, don't stop; simply asterisk it (to remind you of its importance) and continue your search to the end. When you note a relevant reference, also write down its most relevant features to refresh your memory and save time later.

If you still don't find any relevant patents, double-check your search classes using *Classification Definitions*, the *Manual of Classification*, and some help from a patent examiner or assistant in the search room. If you're reasonably sure you're in the right class and still can't find any relevant references, write down the closest ones you can possibly find, even if they're not relevant. This will establish that you made the search, what the closest art is, and how novel your invention is, and you'll have references to cite on your Information Disclosure Statement (discussed in Chapter 13); you should never finish any search without coming up with at least several references. If you do consult examiners, write their names in the comments section of the worksheet.

In each subclass, you'll find patents that are directly classified there, and "cross-references" (XRs), patents primarily classified in another subclass, but also classified in your subclass because they have a feature that makes the cross-reference appropriate. Be sure to review the cross-references as well as the regular patents in each subclass.

The public search room at the PTO has copiers for making instant copies of patents for a per-page fee, but if you don't need instant copies, you can get download patent copies for a fee on EAST or free on the Internet. You can also buy a complete copy of any patent for one patent copy coupon, or use two coupons per patent for rush service. To do this, purchase an adequate supply of coupons from the PTO's cashier (see Appendix 4, Fee Schedule); then write down the number of each patent you select on a coupon, add your name and address, and deposit them in the appropriate box in the search room. The patents you request will be mailed to you, generally in a few days if you use one coupon per patent, or in one day if you staple two coupons together per patent. You can also acquire a copy of a patent as follows:

- To download a copy of any patent from the free patent sites, go to either Google Patents (www.google.com/patents)
- Free Patents Online (www.freepatentsonline.com)
- Free Patent Fetcher (http://free.patentfetcher.com/Patent-Fetcher-Form.php), or
- Pat2PDF (www.pat2pdf.org).

These sites will deliver a PDF copy of the entire patent to your computer desktop.

Step 6: Review the Prior Art to See Whether It Anticipates Your Invention or Renders It Obvious

After you've made your search and obtained the numbers of all the pertinent references, obtain copies and study them. Write a brief summary of each relevant patent, even if it has an abstract, to force you to really understand it. Then, determine if your invention is patentable over the patents you've found. Follow the steps described earlier in this chapter for analyzing the search report when your search is done by someone else to determine whether the prior art renders your invention obvious.

Step 7: Obtain Additional Patents and Classifications

To extend your search further and make it more complete, look at each relevant patent that you found in order to find additional patents and classifications that may be relevant. First check the "References Cited" on the first (or Abstract) page of each patent to find additional patents and other references cited against this patent while it was pending. Look up and check these patents to see if they're also relevant and if so, determine if they anticipate or render your invention obvious. Then check the "Field of Search" on the Abstract page to find additional relevant classes and subs and check the patents in these classes as you did above. It's a lot of work and will take some time, but you'll save a lot of money.

b. Keyword Searching (PubWEST versus Google Patents)

In addition to making a classification search, you can perform a keyword search of your invention on EAST, the Internet, or on PubWEST (Web-based Examiner Search Tool) terminals at all PTRCs. (The PubWEST search engine is not available to the general public on the Internet.) Unfortunately, PubWEST takes some time to learn, and it's probably not worth learning unless you are a frequent patent searcher. Google Patents is far easier to use and provides many of the same features as PubWEST, plus some features that PubWEST lacks.

J. The Scope of Patent Coverage

Although you'd probably like things to be simpler, the determination of whether your invention is patentable will rarely be a "yes" or "no" one, unless your invention is a very simple device, process, or composition. Many inventions are complex enough to have some features, or some combination of features, that will be different enough to be patentable. However, your object is not merely to get a patent, but to get *meaningful* patent coverage—that is, offensive rights that are broad enough that competitors can't "design around" your patent easily. Designing around a patent is the act of making a competitive device or process that is equivalent in function to the patented device but that doesn't infringe the patent.

Often you won't be able to get broad coverage because many "modern" inventions are actually old hat—that is, the basic ideas were known many years before and the real inventions are actually just improvements on old ones. Simply put, you'll often find a search will indicate that your invention, while valuable, may be less of an innovation than you thought it was. You'll thus have to determine whether or not your invention is sufficiently innovative to get meaningful patent protection. In other words, your scope of coverage will depend upon how close the references that your search uncovers are to your invention—that is, how many features of your invention are shown by the references, and how they are shown. In the end, your scope of coverage will actually depend upon the breadth of the claims that you can get the PTO to allow, but this is jumping the gun at this stage.

For an example, let's take a simple invention. As stated, in a simple invention patentability will usually be a black or white determination, and you won't have much of a problem about your scope of coverage. Suppose you've just invented a magnetically operated cat door—that is, you provide a cat with a neck-worn magnet that can operate a release on a cat door. Your search references fail to show any magnetically operated pet release door. Thus, the neck magnet and the magnetic door release are the novel features of your invention. To get a patent, your invention would have

to be limited to these specific features, since neither could be changed or eliminated while producing the same result. However, there is no harm in limiting the invention to these features, since it would be difficult for anyone to "design around" them—that is, it would be difficult or impossible for anyone to provide the same result (a cat-operated door release) without using a neck magnet and a magnetic release.

With other inventions, however, your scope of coverage won't be so broad—that is, it won't be as difficult for someone to design around it. For example, suppose you invented the centrifugal vegetable juicer mentioned previously in Chapter 5—that is, a juicer with a sloping side basket permitting the solid pulp to ride up and out so that juicing could continue without having to empty the pulp from the basket.

If the prior art were not "kind" to you—that is, your search uncovered a patent or other publication that showed a juicer with a basket with sloping sides and with a well at the top to catch and hold the pulp—your application would not be allowed if you claimed just the sloping sides (even though it would be superior to the prior art due to the complete elimination of the pulp). To get the patent, you would have to also claim another feature (say, the trough shape). Thus, by having access to the prior art you would know enough to claim your invention less broadly.

Also, suppose you've invented the napkin-shaping ring of Fig. 6B. Suppose further that Gabel did not exist and that your search uncovers only the Le Sueur patent (see Fig. 6D(c)), which shows a plain, circular napkin ring. You'd be entitled to relatively broad coverage, since your novel features are themselves broad: namely, a ring with inner parts that can shape a napkin when it is pulled through the ring.

However, assuming the Gabel patent does exist and your search uncovers it as well as Le Sueur, what are your novel features now? First, your device has a circular ring with a leg extending inwardly from the ring; neither Gabel nor Le Sueur, nor any possible combination of these references, has this combination. Second, your invention has the flaring arms that shape the napkin; these are attached to the end of the inner leg; the references also lack this feature. Thus to distinguish over Le Sueur and Gabel, you'll have to rely on far more specific features than you'd have to do if only Le Sueur existed. Hence your actual invention would be far narrower, since you'll have to limit it to the novel features that distinguish it from Gabel as well as Le Sueur. Unfortunately, this will narrow your scope of coverage, because competitors can design around you more easily than they could do if only Le Sueur existed.

As you've probably gathered by now, your scope of coverage will be determined by what novel features you need to use to distinguish your invention over the prior art and still provide new results that are different or unexpected enough to be considered unobvious. The fewer the novel features you need, the broader your invention or scope of coverage will be. Stated differently, if you need many new features, or very specific features, to define over the prior art and provide new results, it will usually be relatively easy for a competitor to use fewer or alternative features to provide the same results without infringing your patent.

You should make your scope of coverage determination by determining the fewest number or the broadest feature(s) you'll need to distinguish patentability over the prior art. Do this by a repetitive narrowing trial-and-error process: First, see what minimum feature(s) you'll need to have some novelty over the prior art—that is, enough to distinguish under Section 102 (Box C of Figs. 5C and 6E)—and then see if these would satisfy Section 103 (Boxes D, E, and G)—that is, would they provide any unexpected new results?

If you feel that your minimum number of features are enough to ascend the novelty slope of the Patentability Mountain (pictured in Chapter 5), but would not be sufficient to climb the big nonobviousness slope—that is, you don't have enough features to provide new and unexpected results—then try narrowing your features or adding more until you feel that you'll have enough to make it to the patentability summit.

Common Misconception: If a search shows that your invention is not patentable, you may not manufacture or sell it.

Fact: Even if it's not patentable, you usually still can make and sell it because the prior-art reference(s) that

make it not patentable probably are either expired patents or don't claim your invention. (For more on how to determine if a prior, in-force patent's claims cover you, see Chapter 15.)

TIP

This is another one of those aspects of patent law that may have your head spinning. Fortunately, the material covered here under determining the scope of your protection is also discussed in the different context of drafting your claims. (See Chapter 9.) By the time you read this book thoroughly, you will understand all of this a lot better.

After you evaluate your search results, you'll have a pretty good idea of the minimum number of novel features that are necessary to sufficiently distinguish your invention over the prior art. If you're in doubt that you have enough such features, or if you feel that you'd have to limit your invention to specific features to define structure that would be considered unobvious over the prior art, it probably isn't patentable, or even if patentable, it isn't worth filing on, since it would be easy to design around. One possibility, if you can't make a decision, is to pay for a professional's opinion.

On the other hand, if you've found nothing like your invention in your search, congratulations. You probably have a very broad invention, since, with the eight million plus patents that have issued thus far, one or more features of almost all inventions are likely to be shown in the prior art.

K. Patent and Trademark Resource Centers

As you may know, Patent and Trademark Resource Centers are scattered around the country and are listed below in Fig. 6K. Before going to any PTRC, call to find out their hours of operation and what search facilities they have.

1. Searching at a PTRC

Searching at a PTRC is less useful than searching at the PTO or the Internet because the EAST system at the PTO has far more capabilities than the PubWEST search facilities available at the PTRCs or the Internet searches, which are available on any computer. However the obvious advantage of the latter two is that they are local.

If we could assign percentage values to the various types of searches: a good examiner's search might be estimated at 90% (that is—it has about a 90% chance of standing up in court), a good search by a nonexaminer in the PTO at 80%, and a good search in a PTRC or on the Internet at 70%. (Unfortunately, as in business, there's no certainty in the law.) If your invention is in an active, contemporary field, such as a computer mouse, you should reduce the value of the two nonexaminer types of searches somewhat, due to the fact that patent applications in this field are more likely to be pending.

To make a Classification search at a PTRC in addition to using PubWEST or the Internet, you can also make an *Official Gazette* (OG) search. You should go through the same four steps given above. First, articulate your invention (in the same manner as before), and second, use the reference tools to find the relevant classes and subclasses. The third step is a review of the patents in the selected classes and subclasses. And finally, you should analyze all relevant prior-art references for their effect on your invention's patentability.

For Recent Years the *Official Gazette* Is Available in Electronic Format Only

The *Official Gazette (Patents)* (OG) was a weekly publication (paperback book) that listed the main facts (patentee, assignee, filing date, classification) plus the broadest claim and main drawing figure of every patent issued that week. It also contained pertinent notices, fees, and a list of all PTRCs (Fig. 6K). The OG notices and patents are published each week only at the PTO's website, under Official Gazette Notices and Official Gazette for Patents, respectively. Also, the complete patents are available online elsewhere on the PTO's website each week.

If you make an OG search you can search the paper (book) copies of the OGs up to about ten years ago (when the PTO stopped printing paper copies); thereafter you will have to search for them on the Internet. Each patent entry you find will contain only a single claim (or abstract) and a single figure or drawing of the patent, as indicated in Fig. 6M (a typical page from an OG).

Note that for each patent, the OG entry gives the patent number, inventor's name(s) and address(es), assignee (usually a company that the inventor has transferred ownership of the patent to), filing date, application serial number, international classification, U.S. classification, number of claims, and a sample claim or abstract. If the drawing and claim look relevant, go to the actual patent, order or download a copy of it, and study it at your leisure.

Remember that the claim found in the *Official Gazette* is not a descriptive summary of the technical information in the patent. Rather, it is the essence of the claimed invention. The full text of the patent will contain far more technical information than the claim. So, even if a patent's *Official Gazette* claim doesn't precisely describe your invention, the rest of the patent may still be relevant.

> **EXAMPLE:** When recently performing a PTRC search, a client of ours passed over a patent listed in the OG because the single drawing figure appeared to render the patent irrelevant. In fact, another drawing figure in the passed-over patent (but not found in the OG) anticipated our client's invention and was used by the PTO to reject his application (after he had spent considerable time, money, and energy preparing and filing it). The moral? Take an OG search with a grain of salt. Note well that a figure of the patent that isn't shown in the OG may be highly relevant; thus it's best to search full patents.

To make an OG search of the patents in class 272, subclass 109 (Fig. 6L), start with the first patent in this list, D-262,394X. The "D" means that the patent is a design patent and the "X" means that this patent is a cross-reference. To view patent D-262,394, look on the PTO's website under "Patent Number Searching." You'll find the patent, D-262,394, was issued in 1980. If you find it relevant, print it out and write its identifying data down on your Searcher's Worksheet, Form 6-1.

The second patent in the list, RE-25,843, is a reissue patent. (Reissues are discussed in Chapter 14.) For now, all you have to know is that reissues are also available on the PTO's site. Locate the patent, print it out, and list it on your worksheet if you feel it's relevant.

All of the rest of the patents in subclass 109 are regular utility patents in numerical and date order. Start with patent 9,695, which issued in the middle 1800s. You'll be able to view it easily online, in an old paper OG, or on microfilm or microfiche. Look at the patent in the usual manner to see if it's relevant. If so, write its data on your worksheet.

The Internet has full copies of patents readily accessible on any of the above sites—(each patent usually consists of several pages). You can look at the full text of each patent, one by one, in a similar manner as you looked at their abstracts in the OGs. If you find that the patent is relevant, you can download and print a copy of the whole patent, or just its relevant parts, on the spot.

Alternatively, if you don't want to interrupt the flow of your searching, you can save your patent numbers and print out copies later.

After you've completed Step 3, the review of patents, then perform Step 4, the analysis and decision, in exactly the same manner as outlined above.

L. Problems Searching Software and Business Inventions

Many software experts have recently complained that the PTO has been issuing patents on software and business method inventions that aren't novel and nonobvious over the prior art. There is much validity to this charge—that is, many software and business patents really don't claim a novel and nonobvious invention and could be invalidated by a proper search. Part of the problem is due to differences in the PTO's database of software patents. As a result, some people

Reference Collection of U.S. Patents Available for Public Use in Patent and Trademark Resource Centers

The following libraries, designated as Patent and Trademark Resource Centers (PTRCs), receive patent and trademark information from the U.S. Patent and Trademark Office. Many PTRCs have on file patents issued since 1790, trademarks published since 1872, and select collections of foreign patents. All PTRCs receive both the patent and trademark sections of the *Official Gazette* of the U.S. Patent and Trademark Office and numerical sets of patents in a variety of formats. Patent and trademark search systems in the CASSIS optical disk series are available at all PTRCs to increase access to that information. It is through the optical disk systems and other depository materials that preliminary patent and trademark searches may be conducted through the numerically arranged collections.

Each PTRC offers reference publications that outline and provide access to the patent and trademark classification systems, as well as other documents and publications that supplement the basic search tools. PTRCs provide technical staff assistance in using all materials.

All information is available for use by the public free of charge. However, there may be charges associated with the use of online systems, photocopying, and related services.

Since there are variations in the scope of patent and trademark collections among the PTRCs, and their hours of service to the public vary, anyone contemplating use of these collections at a particular center is urged to contact that center in advance about its collections, services, and hours.

For the latest list of PTRCs, go to www.uspto.gov/learning-and-resources/support-centers/patent-and-trademark-resource-centers-ptrcs, and click on "PTRC Locations by State."

State	Name of Resource Center	Telephone
Alabama	Auburn University Libraries*	334-844-1737
	Birmingham Public Library	205-226-3620
Alaska	Fairbanks: Keith Mather Library	907-474-2636
Arizona	Phoenix: Arizona State Library*	602-926-3870
Arkansas	Little Rock: Arkansas State Library*	501-682-2053
California	Los Angeles Public Library*	213-228-7220
	Riverside: Orbach Science Library	909-827-3316
	San Diego Public Library	619-236-5813
	San Francisco Public Library*	415-557-4500
	Sunnyvale Public Library	408-730-7300
Colorado	Denver Public Library	720-865-1711
Connecticut	Fairfield: Sacred Heart University	203-371-7726
Delaware	Newark: Univ. of Delaware Library	302-831-2965
DC	Washington: Howard Univ. Library	202-806-7252
Florida	Fort Lauderdale: Broward County Main Library*	954-357-7444
	Miami: Dade Public Library*	305-375-2665
	Orlando: Univ. of Central Florida Libraries	407-823-2562
Georgia	Atlanta: Georgia Institute of Tech.	404-385-7185
Hawaii	Honolulu: Hawaii State Public Library System*	808-586-3477
Illinois	Chicago Public Library	312-747-4450
	Macomb: Malpass Library	309-288-2722
Indiana	Indianapolis: Marion County Public Library	317-269-1741
	West Lafayette: Siegesmond Engineering Library	765-494-2872
Kansas	Wichita: Ablah Library, Wichita State Univ.*	800-572-8368
Kentucky	Louisville Free Public Library	502-574-1611
	Highland Heights: Steely Library	859-572-5457
Louisiana	Baton Rouge: Troy H. Middleton Library, Louisiana State Univ.	225-578-8875
Maine	Orono: Raymond H. Fogler Library, University of Maine	207-581-1678
Maryland	College Park: Engineering and Physical Sciences Library, University of Maryland	301-405-9157
	Baltimore: Univ. of Baltimore	410-837-4554

* WEST (Web-based Examiner Search Tool—better searching) subscriber.
▲ EAST (Examiner Assisted Search Tool) subscriber.

Fig. 6K—List of Patent and Trademark Resource Centers

State	Name of Resource Center	Telephone
Massachusetts	Amherst: Physical Sciences Library, Univ. of Massachusetts	612-543-8000
	Boston Public Library*	617-536-5400 Ext. 4256
Michigan	Ann Arbor: Media Union Library, University of Michigan	734-647-5735
	Big Rapids: Abigail S. Timme Library, Ferris State University	231-592-3602
	Detroit Public Library (has APS Image Terminals)*▲	313-481-1391
	Houghton: Michigan Tech	906-487-2500
Minnesota	Hennepin County Library	612-543-8000
Mississippi	Jackson: Mississippi Library Commission	601-961-4111
Missouri	Kansas City: Linda Hall Library*	816-363-4600
	St. Louis Public Library*	314-352-2900
Montana	Butte: Montana College of Mineral Science & Tech. Lib.	406-496-4281
Nebraska	Lincoln: Engineering Library, University of Nebraska*	402-472-3411
Nevada	Reno: University of Nevada-Reno Library	702-784-6500 Ext. 257
New Hampshire	Concord: Univ. of New Hampshire	603-513-5130
New Jersey	Newark Public Library	973-733-7779
	Piscataway: Lib. of Science & Medicine, Rutgers University	732-445-2895
New York	Albany: New York State Library	518-474-5355
	Buffalo and Erie County Public Lib.	716-858-7101
	New York Public Library (The Research Libraries)	212-592-7000
	Rochester Public Library	716-428-8110
	Smithtown: Smithtown Main Lib.	631-265-2072
North Carolina	Raleigh: D.H. Hill Library, N.C State University*	919-515-2935
	Charlotte: J.M. Atkins Library	704-687-2241
North Dakota	Grand Forks: Chester Fritz Lib., University of North Dakota	701-777-4888
Ohio	Akron: Summit Cnty Public Lib.	330-643-9075
	Cincinnati and Hamilton County, Public Library of	513-369-6932
	Cleveland Public Library*	216-623-2870
	Dayton: Paul Laurence Dunbar Library, Wright State University	937-775-3521
	Toledo/Lucas County Public Library*	419-259-5209
Oklahoma	Stillwater: Oklahoma State Univ. Center for Trade Development*	405-744-6546
Pennsylvania	Philadelphia, The Free Library of*	215-686-5394
	Pittsburgh, Carnegie Library of	412-622-3138
	University Park: Pattee Library, Pennsylvania State University	814-865-7617
Puerto Rico	Bayamón: Univ. of Puerto Rico	787-786-5225
	Mayaguez General Library, University of Puerto Rico	787-993-0000 Ext. 3244
Rhode Island	Providence Public Library	401-455-8027
South Carolina	Clemson University Libraries	864-656-3024
South Dakota	Rapid City: Devereaux Library, South Dakota School of Mines & Tech.	605-394-1275
Tennessee	Nashville: Stevenson Science Library, Vanderbilt University	615-322-2717
Texas	Austin: McKinney Engineering Library, Univ. of Texas at Austin	512-495-4511
	College Station: Texas A&M	979-845-2111
	Dallas Public Library*	214-670-1468
	Houston: The Fondren Library Rice University*	713-348-5483
	Lubbock: Texas Tech University	806-742-2282
	San Antonio Public Library	210-207-2500
Utah	Salt Lake City: Marriott Library, University of Utah*	801-581-8394
Vermont	Burlington: Bailey/Howe Library, University of Vermont	802-656-2542
Washington	Seattle: Engineering Library, University of Washington*	206-543-0740
West Virginia	Morgantown: Evansdale Library, West Virginia University*	304-293-4695
Wisconsin	Madison: Kurt F. Wendt Library, Univ. of Wisconsin, Madison	608-262-6845
	Milwaukee Public Library	414-286-3051
Wyoming	Cheyenne: Wyo. State Library	307-777-7281

* WEST (Web-based Examiner Search Tool—better searching) subscriber.
▲ EAST (Examiner Assisted Search Tool) subscriber.

Fig. 6K (cont'd)—List of Patent and Trademark Resource Centers

even want to do away with software patents. That might be a case of throwing out the baby with the bathwater.

Many, if not most, future technological progress will occur in software, but without the incentive of a patent monopoly, software developers will not have an adequate incentive to innovate. There are many other arguments in favor of software patents, but they're beyond the scope of this book.

If you agree and want to support the continued existence of software patents, keep your eyes peeled for any legislative developments and do whatever you can to support the continued existence of software patents. Also if you have a software invention, be aware of the difficulty in doing a good search of your invention. If you search your invention in the PTO database there will be a greater chance that your search will not catch all of the relevant prior art.

One software patent resource is the Source Translation and Optimization patent website (www.bustpatents.com). The STO is directed by Gregory Aharonian, one of the PTO's most vocal critics. The site provides critiques, legal reviews, CAFC rulings, file wrappers, and infringement lawsuits relating to software patents. The STO also offers a free email newsletter.

M. Searches on the Internet

Free patent searching systems are useful tools for conducting fair-to-good patent searches on inventions using recent technologies and for making free searches for inventions in older technologies. If you are willing to spend the time to do a thorough job, you can make a fairly complete search online. However, if you are unwilling or unable to spend the time, hire a searcher, because it requires diligence to conduct a thorough patent search on the Internet.

1. Google Patents

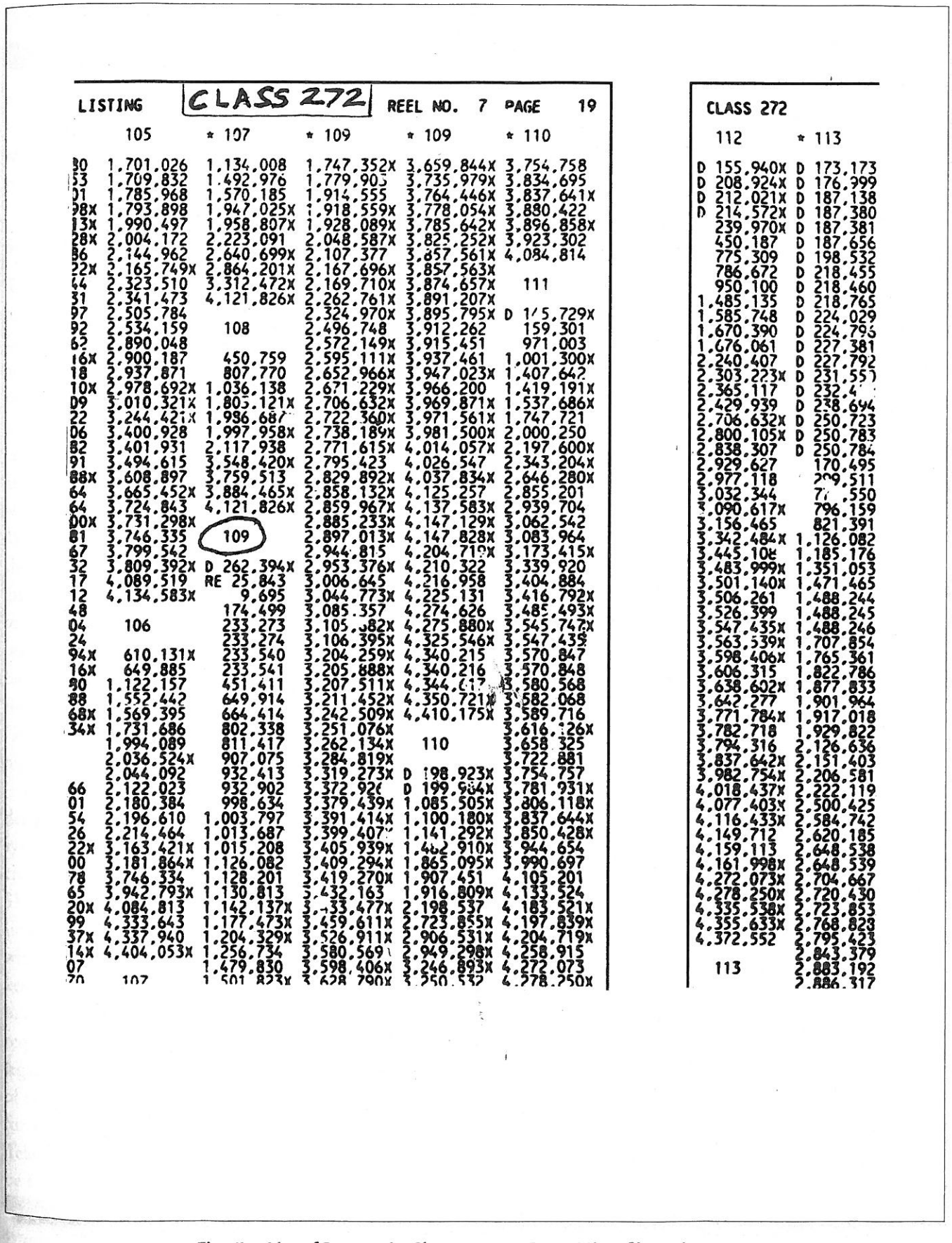
Google Patents (www.google.com/patents) provides the most complete, most accurate, and fastest way to make online searches. Simply enter the keywords and all possible variations you can think of and it will search the entire U.S. patent database and return all relevant patents.

Fig 6N is Google Patent Search's main page. It is your gateway to about eight million searchable patents and patent applications dating back to 1836. To search from this page, enter your key search terms, such as "bicycle" and "fiberglass." You'll get a list of patents that have all of your search terms. Click on a patent to get a new page with all of the parts of the patent and a link to download a PDF of the patent. The main search page also links to a help site and to an Advanced Patent Search.

The Google Advanced Search page (Fig. 6O) is where you can refine your search to look for patents with all of your keywords, an exact phrase, only one of a group of words, or omitting a word. Also it can be used to search for patents by number, title, inventor, assignee, or a specific U.S. or international classification. You can restrict the search to U.S. patents or published U.S. patent applications, utility, design patents, etc., or by a date or issue or filing date range. All of these helpful features are free. Thank you, Google!

2. PTO Search With EPO Supplement

The PTO's system can be used to make Keyword patentability searches of U.S. patents back to 1976 and U.S. patent applications back to March 2001 when they were first published. You can also use it to make Classification searches by patent number or class and subclass of U.S. patents from 1790 to the present. It cannot be used to make a patentability search of any patents before 1976. The PTO's URL for searching services is http://patft.uspto.gov. The PTO's servers have been vastly improved, so that you can easily and quickly download and view the images of any patent back to 1790. As stated, to print any patent you will find it faster and easier to use any of the services listed above, which can deliver PDFs of entire patents, rather than one page at a time. Everything is free on the PTO's website, except for orders of patents to be sent by mail. Fig. 6P shows the main page of the PTO's search website—note that you can make the three types of searches of either patents or patent applications. In order



LISTING CLASS 272 REEL NO. 7 PAGE 19

105	* 107	* 109	* 109	* 110
30 1,701,026	1,134,008	1,747,352X	3,659,844X	3,754,758
53 1,709,832	1,492,976	1,779,905	3,735,979X	3,834,695
01 1,785,968	1,570,185	1,914,555	3,764,446X	3,837,641X
98X 1,793,898	1,947,025X	1,918,559X	3,778,054X	3,880,422
13X 1,990,497	1,958,807X	1,928,089X	3,785,642X	3,896,858X
28X 2,004,172	2,223,091	2,048,587X	3,825,252X	3,923,302
86 2,144,962	2,640,699X	2,107,377	3,857,561X	4,084,814
22X 2,165,749X	2,864,201X	2,167,696X	3,857,563X	
44 2,323,510	3,312,472X	2,169,710X	3,874,657X	111
31 2,341,473	4,121,826X	2,262,761X	3,891,207X	
97 2,505,784		2,324,970X	3,895,795X	D 175,729X
92 2,534,159	108	2,496,748	3,912,262	159,301
62 2,890,048		2,572,149X	3,915,451	971,003
16X 2,900,187	450,759	2,595,111X	3,937,461	1,001,300X
18 2,937,871	807,770	2,652,966X	3,947,023X	1,407,642
10X 2,978,692X	1,036,138	2,671,229X	3,966,200	1,419,191X
D9 3,010,321X	1,803,121X	2,706,632X	3,969,871X	1,537,686X
22 3,244,421X	1,986,687	2,722,360X	3,971,561X	1,747,721
06 3,400,928	1,997,958X	2,738,189X	3,981,500X	2,000,250
82 3,401,931	2,117,938	2,771,615X	4,014,057X	2,197,600X
91 3,494,615	3,548,420X	2,795,423	4,026,547	2,343,204X
88X 3,608,897	3,759,513	2,829,892X	4,037,834X	2,646,280X
64 3,665,452X	3,884,465X	2,858,132X	4,125,257	2,855,201
64 3,724,843	4,121,826X	2,859,967X	4,137,583X	2,939,704
00X 3,731,298X		2,885,233X	4,147,129X	3,062,542
81 3,746,335	109	2,897,013X	4,147,828X	3,083,964
67 3,799,542		2,944,815	4,204,719X	3,173,415X
32 3,809,392X	D 262,394X	2,953,376X	4,210,322	3,339,920
17 4,089,519	RE 25,843	3,006,645	4,216,958	3,404,884
12 4,134,583X	9,695	3,044,773X	4,225,131	3,416,792X
48	174,499	3,085,357	4,274,626	3,485,493X
04 106	233,273	3,105,982X	4,275,880X	3,545,747X
24	233,274	3,106,395X	4,325,546X	3,547,439
94X 610,131X	233,540	3,204,259X	4,340,215	3,570,847
16X 649,885	233,541	3,205,888X	4,340,216	3,570,848
90 1,122,157	451,411	3,207,511X	4,344,617	3,580,568
88 1,352,442	649,914	3,211,452X	4,350,721X	3,582,068
68X 1,569,395	664,414	3,242,509X	4,410,175X	3,589,716
34X 1,731,686	802,338	3,251,076X		3,616,126X
1,994,089	811,417	3,262,134X	110	3,658,325
2,036,524X	907,075	3,284,819X		3,722,881
2,044,092	932,413	3,319,273X	D 198,923X	3,754,757
66 2,122,023	932,902	3,372,926	D 199,934X	3,781,931X
01 2,180,384	998,634	3,379,439X	1,085,505X	3,806,118X
54 2,196,610	1,003,797	3,391,414X	1,100,180X	3,837,644X
26 2,214,464	1,013,687	3,399,407X	1,141,292X	3,850,428X
22X 3,163,421X	1,015,208	3,405,939X	1,462,910X	3,944,654
00 3,181,864X	1,126,082	3,409,294X	1,865,095X	3,990,697
78 3,746,334	1,128,201	3,419,270X	1,907,451	4,105,201
65 3,942,793X	1,130,813	3,432,163	1,916,809X	4,133,524
20X 4,084,813	1,142,137X	3,433,477X	2,198,537	4,183,521X
99 4,333,643	1,177,473X	3,459,611X	2,723,855X	4,197,839X
37X 4,337,940	1,204,329X	3,526,911X	2,906,531X	4,204,719X
14X 4,404,053X	1,256,734	3,580,569	2,949,298X	4,258,915
07	1,479,830	3,598,406X	3,246,893X	4,272,073
70 107	1,501,823X	3,628,790X	3,250,532	4,278,250X

CLASS 272

112	* 113
D 155,940X	D 173,173
D 208,924X	D 176,999
D 212,021X	D 187,138
D 214,572X	D 187,380
239,970X	D 187,381
450,187	D 187,656
775,309	D 198,532
786,672	D 218,455
950,100	D 218,460
1,485,135	D 218,765
1,585,748	D 224,029
1,670,390	D 224,796
1,676,061	D 227,381
2,240,407	D 227,792
2,303,223X	D 231,557
2,365,117	D 232,4[illegible]
2,429,939	D 238,694
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2,800,105X	D 250,783
2,838,307	D 250,784
2,929,627	170,495
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3,445,108	1,185,176
3,483,999X	1,351,053
3,501,140X	1,471,465
3,506,261	1,488,244
3,526,399	1,488,245
3,547,435X	1,488,246
3,563,539X	1,707,854
3,598,406X	1,765,361
3,606,315	1,822,786
3,638,602X	1,877,833
3,642,277	1,901,964
3,771,784X	1,917,018
3,782,718	1,929,822
3,794,316	2,126,636
3,837,642X	2,151,403
3,982,754X	2,206,581
4,018,437X	2,222,119
4,077,403X	2,500,425
4,116,433X	2,584,742
4,149,712	2,620,185
4,159,113	2,648,538
4,161,998X	2,648,539
4,272,073X	2,704,667
4,278,250X	2,720,430
4,335,538X	2,723,853
4,355,633X	2,768,823
4,372,552	2,795,423
	2,843,379
113	2,883,192
	2,886,317

Fig. 6L—List of Patents in Class 272-109 From Microfilm Printout

General and Mechanical

http://www.uspto.gov/web/patents/patog/week30/OG/GMUtility.htm

Google

Netflix Apple Mac Amazon eBay Yahoo! News (928) Apple (276)

United States Patent and Trademark Office

General and Mechanical:

Previous Next

Home Granted Patents Help

Class	Subclass	Patent
2	2.5	07080411
	4	07080412
	60	07080413
	424	07080414
	435	07080415
4	559	07080416
	578.1	07080417
5	86.1	07080418
	426	07080419
	640	07080420
	645	07080421
	715	07080422
7	128	07080423
15	1.7	07080424
	327.6	07080425
16	10	07080426
	110.1	07080427
	265	07080428
24	399	07080429
	578.13	07080430
29	26A	07080431
	229	07080432
	276	07080433
	281.5	07080434
	403.3	07080435
	421.1	07080436
		07080437
	428	07080438
	434	07080439
	450	07080440
	527.2	07080441
	594	07080442
	722	07080443
	740	07080444
	830	07080445
	832	07080446
	847	07080447
	852	07080448
	854	07080449
	857	07080450
	874	07080451

Full Text

US 7,080,411 B2

Print this page

PROTECTIVE GARMENT

Andrew Robert England Kerr, 524 Hagley Road West, Birmingham B68 0B7 (United Kingdom)

Filed on Dec. 23, 2003, as Appl. No. 10/743,920.

Application 10/743920 is a continuation of application No. 09/980678, filed on Oct. 31, 2001, granted, now 6,681,399.

Claims priority of application No. 9904534.6 (GB), filed on Feb. 27, 1999; and application No. 9904754.0 (GB), filed on Mar. 02, 1999.

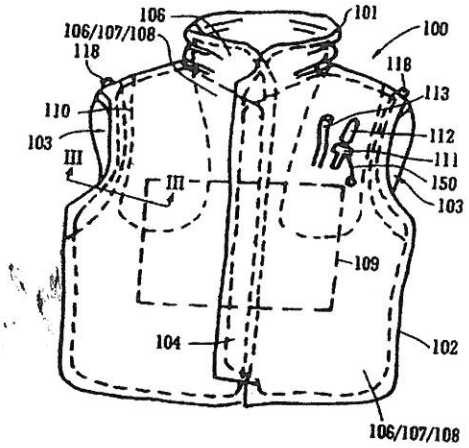
Prior Publication US 2004/0177425 A1, Sep. 16, 2004

This patent is subject to a terminal disclaimer.

Int. Cl. ***F41H 1/02*** (2006.01)

U.S. Cl. 2—2.5

24 Claims



1. A protective body garment comprising:

(a) a vest having a body with arm holes, the vest having an internal surface and an external surface, the vest having a front that, when worn, is adjacent to a wearer's chest and stomach, sides that, when worn, are adjacent to the wearer's sides, a back that, when worn, is adjacent to the wearer's back, and a pair of shoulders that, when worn, are above the wearer's shoulders;

(b) an inflatable flotation bladder in the form of a bag between the inner surface of the vest and the penetration resistant armour; and

(c) penetration resistant armour located under the external surface of the vest and over the inflatable flotation bladder;

wherein the inflatable flotation bladder is between the internal surface of the vest and the penetration resistant armour and the penetration resistant armour is between the external surface of the vest and the inflatable flotation bladder.

Fig 6M– Example From Online Publication of *Official Gazette* Showing Patent Illustration and Sample Claim

to view and print the actual images of patents on this website you may need to download the AlternaTIFF viewer or use one of the free services listed above. You can do a rough extension of your patentability search of U.S. patents back to the 1920s at the EPO's site (https://worldwide.espacenet.com). In addition, this site also provides a searchable database for some foreign patents.

3. Limitations of the PTO and Other Systems

The fact that the PTO website only permits you to search patents issued since 1971 or 1976 (while the Google search site goes all the way back to 1836), creates an extremely important limitation. All previous inventions (prior art) are relevant when determining whether a new invention qualifies for a patent. Therefore, to be effective, a patent search must cover the earliest prior art that might show your invention. Since patentability searches of the PTO system can be made back only to 1976, you can have confidence in your search results on the PTO's site only if your invention technology—for example an Internet invention—wasn't around prior to 1971 or 1976. For a low-tech invention that requires searching back beyond the 1971 date (for instance, a bicycle) these systems will only provide a fraction of the total prior art for that invention. Thus you should use Google's patent search site to search back to the first numbered U.S. patent, which issued in 1836.

A second limitation is the fact that you must depend on keywords and the PTO's classification system. Traditional patent searching uses just the classification scheme to find relevant prior art. This scheme is the result of humans grouping like inventions together and does not depend on the whimsy of which search terms you select. The keyword system, on the other hand, requires you to come up with the right words in your search request. However, patents are often written with legal-sounding terms or technical jargon in place of otherwise ordinary terms. For example, a patent for a telephone may be titled "Full Duplex Voice Telecommunication Device." Such a patent may never be found with "telephone" as the search term. This limitation is inherent in any computerized searching system based on search terms. The disadvantages of

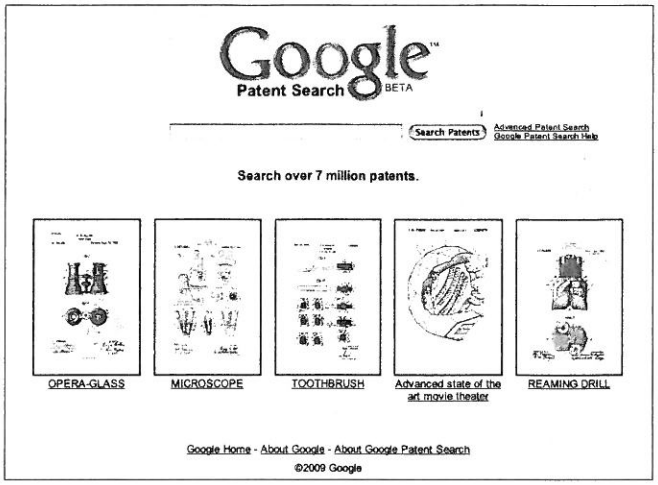


Fig. 6N—Google Patent Search (Main Page)

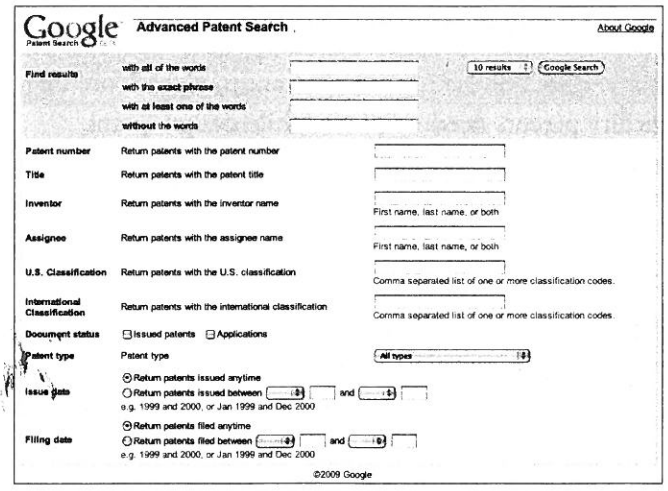


Fig. 6O—Google Advanced Patent Search

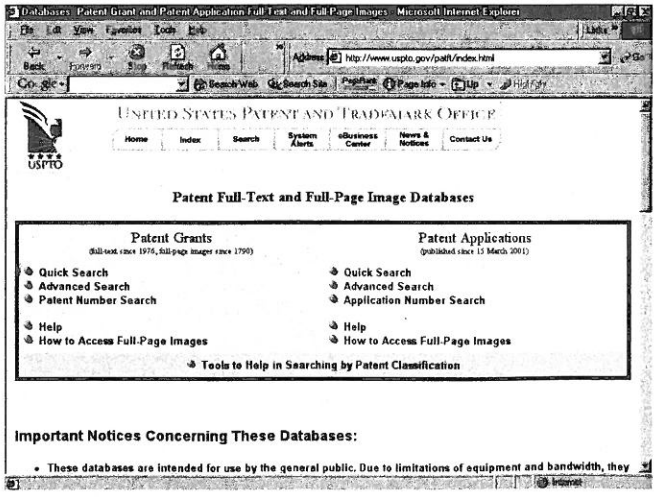


Fig. 6P—PTO Search Site (Main Page)

the keyword search system can to some extent be overcome by following the tips described below as well as by using the logic implicit in the Boolean search technique and supplementing your Keyword search with a Classification search.

4. The Ways to Search the PTO's Website

There are three ways to make a search on the PTO's website (Quick, Advanced, and Patent Number).

a. PTO Patent Number Search

To make a patent number search (better termed a patent lookup by number) on the PTO's website, go to the main search page (Fig. 6P) and click "Patent Number Search," which will take you to the "Patent Number Search" page shown in Fig. 6Q. Then enter the number of the patent you want to view. Note that utility patents need no prefix while design, plant, and reissue patents, and defensive publications (see Chapter 7) require the prefixes indicated.

Next, click "Search," which will take you to the "Results" page (see Fig. 6R). This shows that the patent is available and gives its title. Next, click the patent number or title, which will take you to the "Full Text Display" page (see Fig. 6S). This page displays the entire text of the patent and all of its bibliographic data. However, only the first page of this text is shown. Scroll down to see the rest of the patent. Any of the text can be copied and pasted into a word processor for editing. This page does not display any of the drawings of the patent displayed, however.

Finally, click "Images" at the top of the page and the first (or abstract) page of the actual patent appears (see Fig. 6T). Note that in addition to the first page of the patent, some extraneous information (the PTO's logo and some navigation buttons) also appears at the top and left side of the abstract page. The buttons are used to display other pages of the patent.

If you need to obtain copies of any patent, it's best to use one of the private patent copy supply services listed above because the PTO's server can download only one page of a patent at a time. If you do want to get a copy of any patent from the PTO's site, print out the actual images using the above procedure; don't print the text version or the patent page with the extraneous information. To print just the patent images, simply click the printer icon (not shown) at the top of the page just below the patent number. (Don't click "Print" on your computer's toolbar above the page.)

The above procedure can be used to look up patent applications; just use the right-hand side as seen in Fig. 6P. If you do make a patentability search, you should search both patents and published patent applications.

b. PTO Quick Search

The PTO's "Quick Search" page allows you to enter and search two simple Boolean terms, such as bicycle AND aluminum (as shown in Fig. 6U). Note that the terms Description/Specification are selected in the Field 1 and Field 2 boxes; this is where you should make all Boolean searches. Also note that the years 1996–2001 are displayed in the "Select Years" box. In addition to these years, you should repeat the search as necessary, selecting all other year periods so as to cover all years back to 1976. (The "Quick Search" page and the "Advanced Search" page can also be used to make bibliographic searches.)

Fig. 6V shows the results of the quick search of Fig. 6U. Note that the search yielded 947 patents, which is too large a number to handle, so the search will have to be narrowed by using more specific search terms. Note that Fig. 6U displays the first 16 patents. Scrolling down and visiting subsequent page links can show the rest. To view any patent that looks interesting, click its title or number. Again, the same procedure can be used to search patent applications (use the information on the right-hand side of Fig. 6P).

Also note that in addition to the AND Boolean operator, the operators OR and ANDNOT are available. Further, nested expressions, such as *tennis* AND (*racquet* OR *racket*) are available. If you enter this query, you will retrieve a list of all patents that contain both the terms tennis and either *racket* or *racquet* somewhere in the document. For another example, consider the search terms *television* OR (*cathode* AND *tube*). This query would return patents

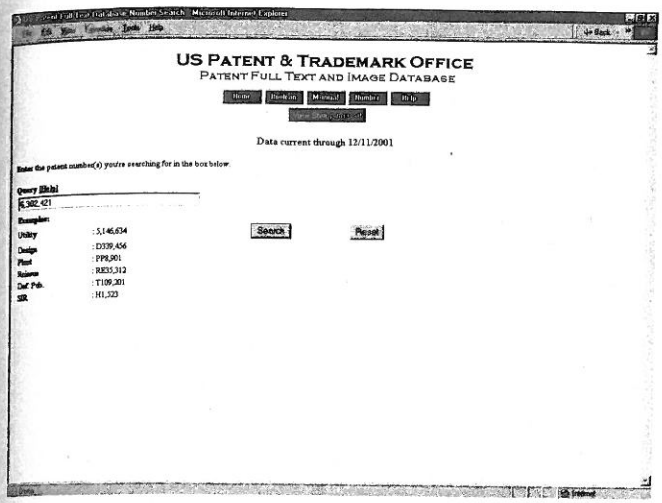


Fig. 6Q—PTO Patent Number Search Page

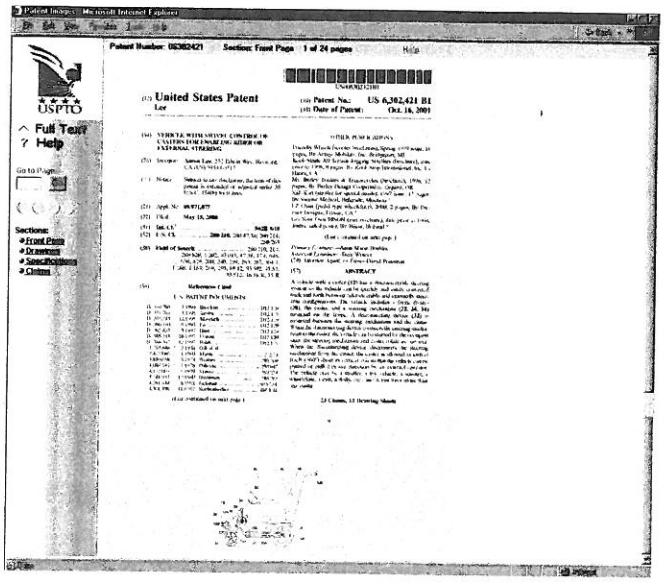


Fig. 6T—Patent Image (Page 1)

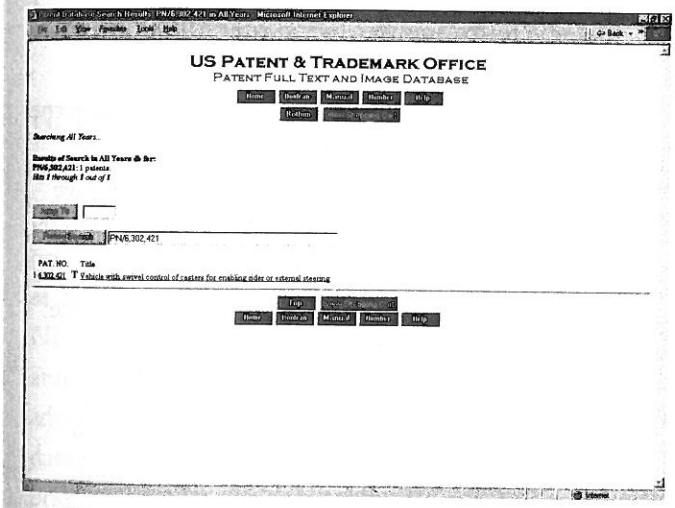


Fig. 6R—PTO Patent Number Search Results Page

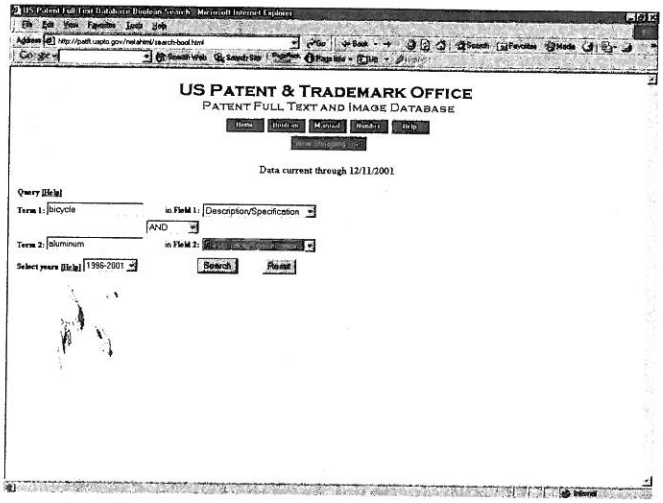


Fig. 6U—PTO Quick Text Search Page

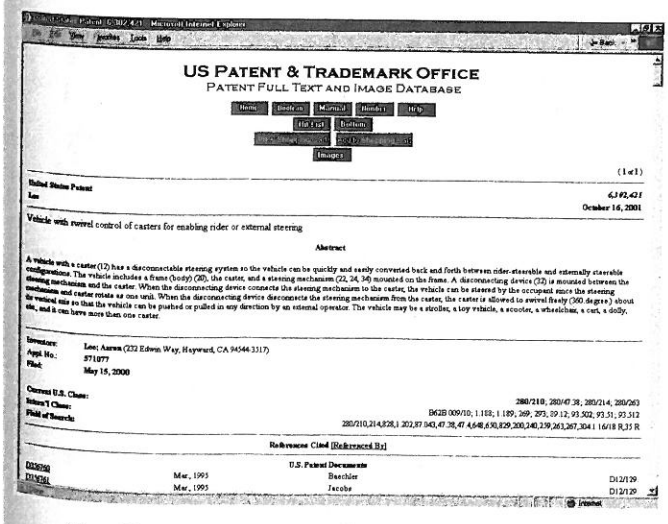


Fig. 6S—PTO Patent Full Text Display (Page 1)

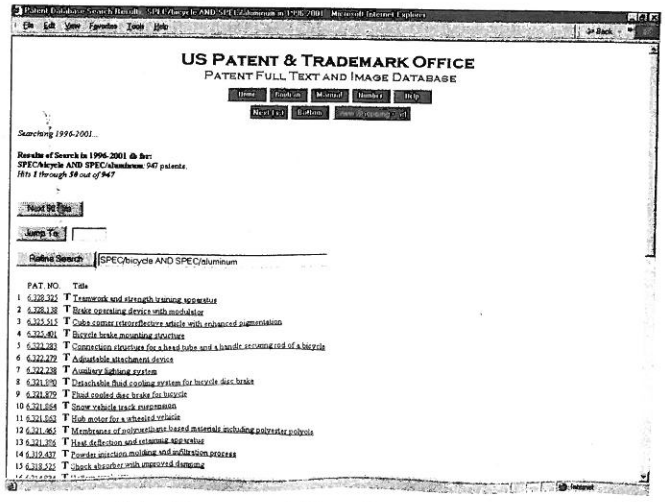


Fig. 6V—PTO Quick Text Search Results Page

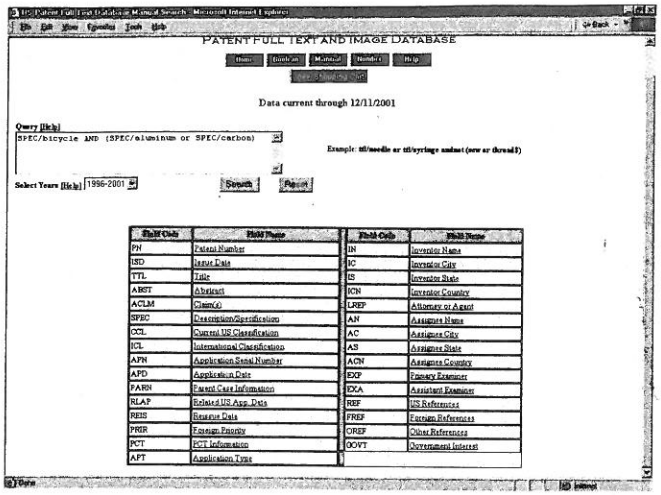


Fig. 6W—PTO Advanced Search Page

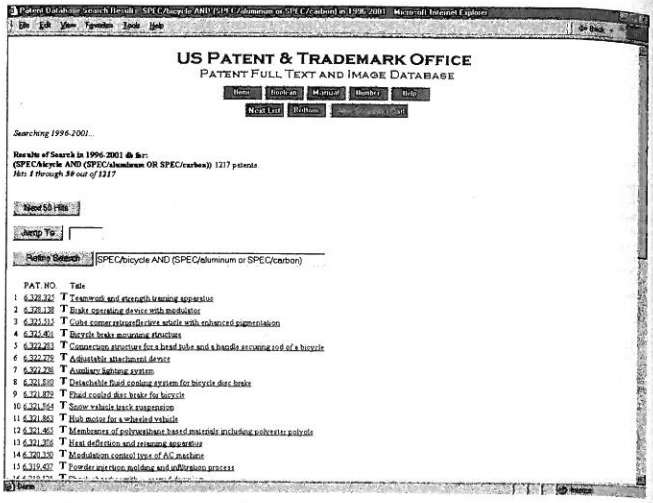


Fig. 6X—PTO Advanced Search Results (Page 1)

containing either the word *television* OR both the words *cathode* AND *tube*. A third example is the search expression *needle* ANDNOT (*(record* AND *player)* OR sewing). This complex query will generate a list of hits that contain the word needle, but not contain any references to sewing. In addition, none of the hits would contain the combination of record AND player.

c. PTO Advanced Search

Despite its name, the "Advanced Search" page (see Fig. 6W) really doesn't offer any more capabilities than the "Quick Search" page. The "Advanced Search" page is simply more difficult to use since it requires that you enter the search query in free form. The field must be manually typed (see Fig. 6W). Note that the field codes must be typed before the search terms. Fig. 6X shows part of the results of the advanced search of Fig. 6W.

5. Important Searching Tips

Your searching can be more productive and accurate if you follow these important tips:

1. *Less is more.* The fewer words used to define a search, the broader the results, and vice versa. For example, in 2016, a search done with the three-word term "ergonomic computer mouse" found 62 U.S. patents; a search done with the two-word term "computer mouse" found over 12,000 U.S. patents; and a search done with the single term "mouse" found over 400,000 U.S. patents.
2. *Use alternative terms.* A variety of different terms are often used in patents to describe similar inventions, so search with as many alternative terms as you can think of. For example, a computer mouse is also referred to as a "computer input device" or a "pointing device."
3. *Make good use of the Boolean connectors,* AND, OR, and ANDNOT, to connect words or terms in a box in any of the search methods, except for Patent Number Search. For example, "ergonomic AND mouse" can be entered in the Simple Text Search box. When Boolean connectors are used, multiple-word terms must be enclosed in quotes. For example, "ergonomic AND 'pointing device'" will search for all patents that have the word "ergonomic" AND the expression "pointing device." Boolean connectors can also be used to search for inventions with alternative terms simultaneously. For example, "computer mouse OR 'pointing device'" finds all patents with either the word "ergonomic" OR the expression "pointing device."
4. *Use wild cards.* Use the asterisk (*) as a wild card to represent any character or characters. For example, John* finds patents by all inventors

with the first or last name starting with John, and ending with any character or characters, including John, Johnny, Johnson, and Johnston. Use the question mark (?) as a wild card to represent any single character. For example, ?am finds ram, cam, jam, etc.

5. *Inventor Names.* Always enter inventor names last-name first, for example, Edison Thomas.
6. *Class and References.* If you find a relevant patent, click on the Intl. Class and U.S. Class links to display patents for potentially similar inventions, and the U.S. References link to view the patents specifically cited as being similar.

Information on using more advanced search techniques can be found by clicking the search language link in the Advanced Text Search page.

N. NPL (Non-Patent Literature) Searches

While patent databases are the best place to make preexamination searches of inventions, additional prior art can sometimes be found by making a search of Non-Patent Literature, which the PTO calls NPL. NPL includes periodicals, textbooks, websites (current and obsolete), published theses, product manuals, advertisements, etc. Remember that any publication dated earlier than your date of invention can be valid prior art against your invention. There are many excellent places to search for NPL. Here are a few:

- **General Search Engines:** Internet search engines, including Google (www.Google.com), Bing (www.Bing.com), and Yahoo (www.Yahoo.com) can be used in the same manner as any of the Keyword patent searches above: you enter keyword combinations in the search box (e.g., "bicycle" and "carbon fiber alloy") and examine the NPL that the engine returns. If you get too many references, add or narrow your keywords to narrow the search and if you don't get enough references, use fewer and/or broader terms to broaden your search.
- **Specialized Search Engines:** A scientific search engine such as Google Scholar (http://Scholar.Google.com) will filter out nonscientific sites to speed searching.

Lastly, don't forget about Wikipedia (www.Wikipedia.org), a free online encyclopedia that provides a great introduction and summary of practically any subject under the sun. It's a great place to start and to obtain a picture of the overall landscape before you drill down using one or more search engines.

O. Summary

There are many reasons to perform a patentability search for your invention: to save needless work and expenditures; to facilitate patent application preparation prosecution; to learn more about your invention; and to facilitate licensing. To possibly avoid making a full search, make a quick preliminary search yourself in stores and catalogs.

If you hire someone to make a search, hire a competent, experienced searcher, preferably a patent agent or attorney, and prepare your searcher with a full description of your invention. In order to analyze a search report, read the cited patents and other references carefully and determine what novel features your invention has and whether these are nonobvious.

All patent searches must now be made on a computer. To search, use (a) a Patent Resource Center's computer search facilities, (b) the Internet with a personal computer, namely the free website services of Google, the PTO, and the EPO (or use a fee-based commercial service), or (c) the EAST system in the PTO. Computer searches should be made using either Keywords by looking for patents with combinations of appropriate keywords or the PTO's Classification system where you can review all the patents in a particular subject-matter class. If you make a computer search, and you have a low-tech invention, make sure the computer's database extends all the way back to 1836.